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Chien

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[54] **FLASHING FOOTWEAR LIGHT MODULE**

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[58] **Field of Search** ..... 362/103, 200, 362/201, 251, 276, 800, 802; 36/137; 200/61.45 R, 61.48

[56] **References Cited**

U.S. PATENT DOCUMENTS

2,572,760	10/1951	Rikelman	362/103
2,634,407	4/1953	Johnson	340/321
2,849,819	9/1985	Murphy et al.	446/153
2,959,892	11/1960	Johnson	446/421
3,053,949	9/1962	Johnson	200/61.49
3,946,505	3/1976	Dana, III	362/103
4,158,922	6/1979	Dana, III	36/137
4,231,079	10/1980	Heminover	362/106
4,412,205	10/1983	Von Kemenczky	340/331
4,701,146	10/1987	Swenson	446/130
4,800,469	1/1989	Leon	362/200
4,848,009	7/1989	Rodgers	36/137
5,343,190	8/1994	Rodgers	340/573
5,406,724	4/1995	Lin	36/137
5,408,764	4/1995	Wut	36/137
5,419,061	5/1995	Barrocas	36/137
5,438,493	8/1995	Tseng	362/103
5,463,537	10/1995	Trattner et al.	362/103
5,465,197	11/1995	Chien	362/276

FOREIGN PATENT DOCUMENTS

2675025	10/1992	France	36/137

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[57] **ABSTRACT**

A flasher module for footwear includes a main housing containing all necessary circuitry for supplying power to at least one LED and for causing the LED to flash in response to movement of the shoe, except that at least one upper contact is affixed to a press fit cover such that when the press fit cover is secured to the main housing, at least two batteries are sandwiched between the upper contact and a lower contact in the main housing to complete a power supply circuit. The at least two batteries are connected in series, and two additional batteries may also be included in various series and parallel combinations depending on the desired voltage and current. An improved motion sensitive switch includes a terminal member from which a coil spring extends on one side to engage an outer conductive member upon motion of the shoe, the coil spring being soldered to the terminal member on the opposite side from the free end of the spring. The outer conductive member can be semi-cylindrical in form to offer a lower profile and more interesting lighting patterns.

21 Claims, 8 Drawing Sheets